

## ABSTRACT:

The invention relates to an encoding method for the compression of a video sequence which is organized in groups of frames decomposed by means of a wavelet transform. The method is based on the hierarchical subband encoding process SPIHT that transforms the original set of picture elements (pixels) into coefficients ordered by means of three ordered lists called list of insignificant sets (LIS), list of insignificant pixels (LIP) and list of significant pixels (LSP). This SPIHT algorithm, comprising the following steps : initialization, sorting pass(es), refinement pass, and quantization step update, is characterized in that:

(a) in the initialization step, the three coefficients corresponding to the same location in the three color planes Y, U and V are put sequentially in the LIS in order to occupy neighboring positions and to remain together in said LIS for the following sorting passes if they all have insignificant offspring when analyzed one after the other at each significance level, and the last bitplane for which insignificant offspring in luminance implies insignificant offspring in chrominance,  $n_i$ , is computed based on set significance level of the coefficients in the root subband and output in the bitstream ;

(b) in the sorting pass(es) going from  $n_{\max}$  to  $n_i$ , when a luminance coefficient has insignificant offspring and if the three following conditions are satisfied by the two coefficients that follow said coefficient in the LIS:

- they are U and V coefficients respectively ;
  - they have the same spatio-temporal coordinates as said luminance coefficient;
  - they also have insignificant offspring;
- then this situation is coded by only a unique symbol.